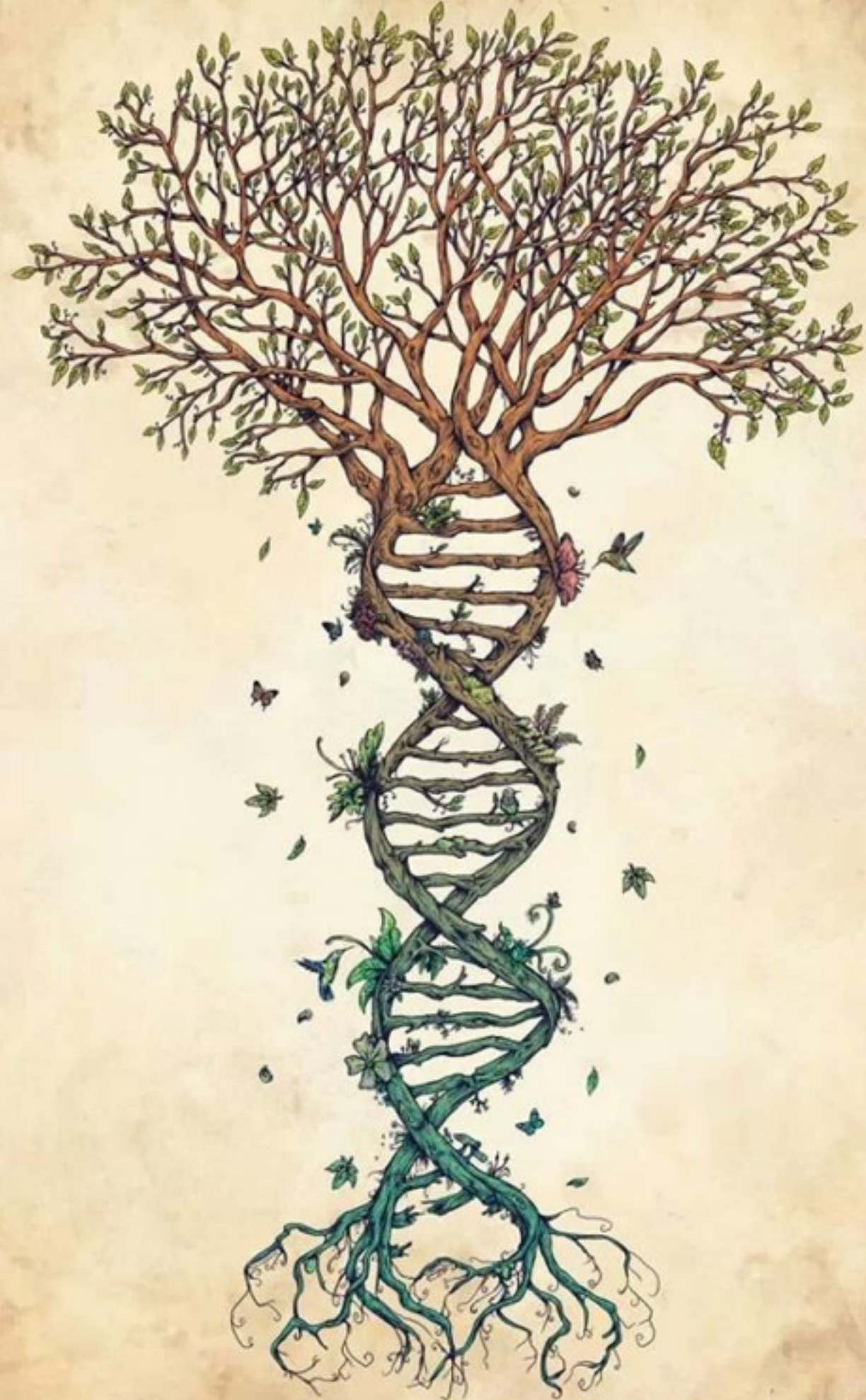


MUSEUM OF NATURAL HISTORY



CONTRIBUTIONS TO EVOLUTIONARY BIOLOGY

Mitchell Walston



INTRODUCTION

Evolutionary thought, the idea that species change over time, has been around for ages. However, the first theory of evolution was fully formed by Jean-Baptiste Lamarck. Years later, Charles Darwin proposed a new theory based on natural selection. Along with natural selection came genetics, the study of genes. Gregor Mendel is credited with proposing the laws of inheritance.

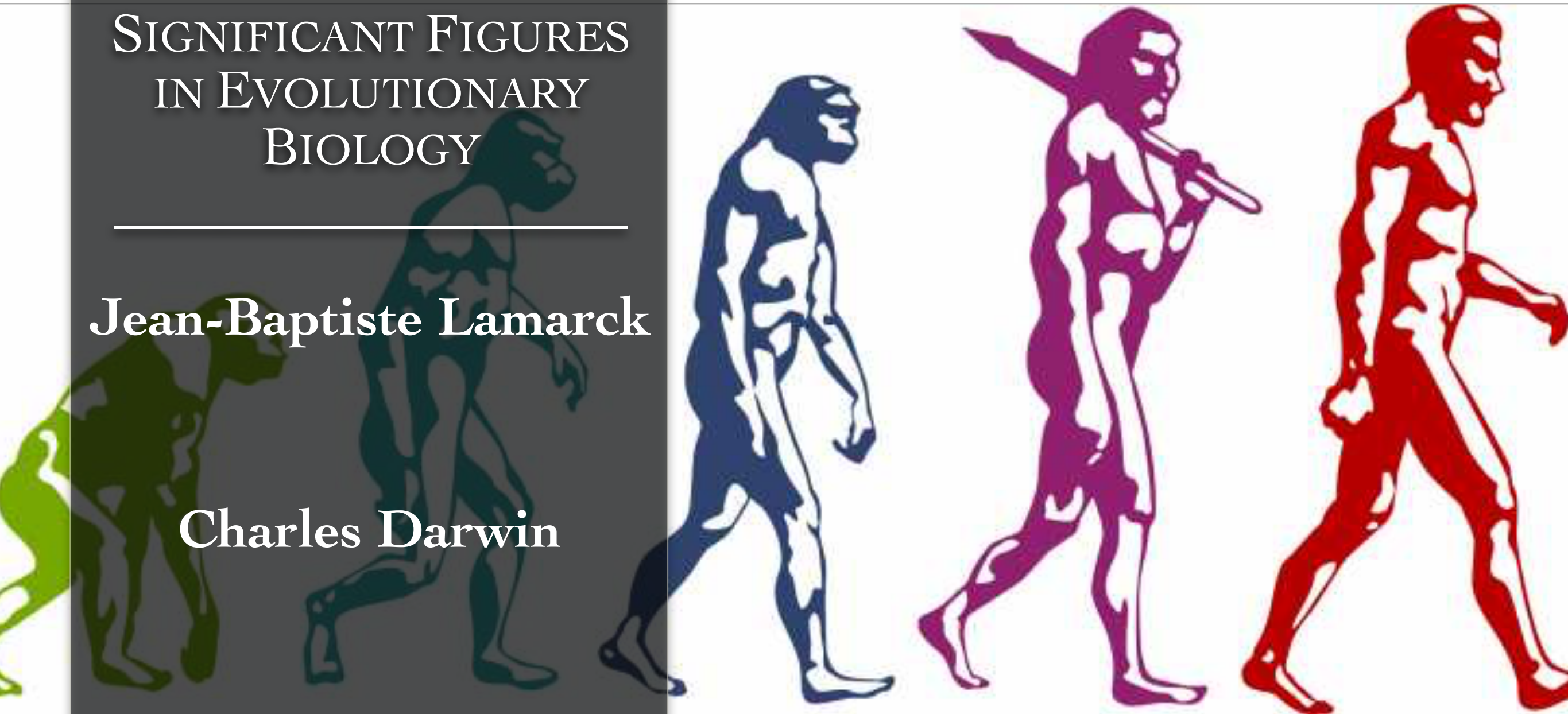
CHAPTER 1

SIGNIFICANT FIGURES IN EVOLUTIONARY BIOLOGY

Jean-Baptiste Lamarck

Charles Darwin

Gregor Mendel



Jean-Baptiste Lamarck

1744-1829

Who

Lamarck was a French biologist best known for being the first to propose an evolutionary mechanism in which the gradual change in species occurs.

Use and Disuse

This is the idea that traits that are used become more developed and passed on to offspring. Contrastingly, if a trait is not used, that trait becomes reduced and disappears in successive generations. A classic example involves a giraffe that, over a lifetime of straining to reach, develops an elongated neck.



What

Lamarck introduced two mechanisms for evolution: Use and disuse, and inheritance of acquired characteristics.

Inheritance of Acquired Characteristics

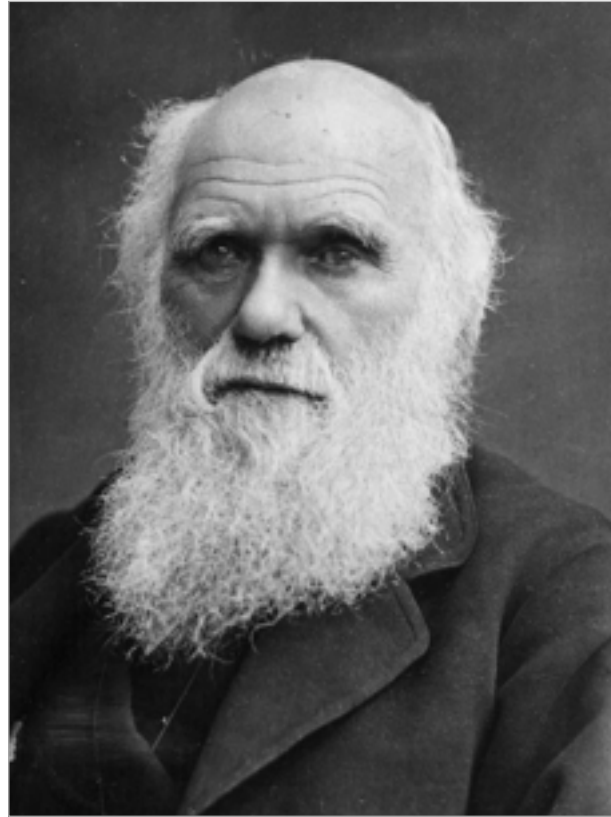
This is the idea that traits changed or acquired over a lifetime can be passed down to offspring.

According to Lamarck's Theory, giraffes that acquired long necks would have offspring with long necks. This type of inheritance has been disproved.



Charles Darwin

1809-1882



- Darwin was an English geologist and naturalist. He is best known for his contribution to the theory of evolution.



- Darwin joined the *HMS Beagle* on a 5-year-long voyage around the world

This was the idea that species survived through a process called “natural selection”.

Species that successfully adapted to the changing requirements of their habitat survived and reproduced, while those that failed to evolve died off.

Darwin finally published this new theory in his 1859 book, *On the Origin of Species*.



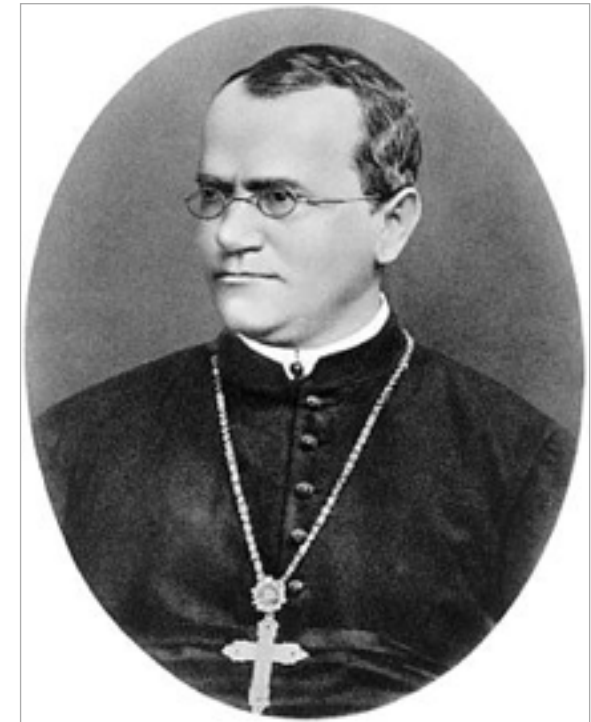
Short video describing Darwin's life and his theory of evolution by natural selection.

- Gregor Mendel was an Austrian monk who discovered the basic principles of heredity through experiments with pea plants.



Gregor Mendel

1822-1884



Mendel's garden at the Brno Augustinian Monastery.

Video about Mendel's life and his famous pea plant experiments.

Let's See How Well You Adapted!

Review: Contributions to Evolutionary Biology

Question 1 of 5

Who theorized that different species gradually evolved from common ancestors?

- ☒ A. Charles Darwin
- ☐ B. Gregor Mendel
- ☐ C. Jean-Baptists Lamarck



Check Answer



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- Information about Charles Darwin from <http://www.biography.com/people/charles-darwin-9266433#synopsis>
- Information on Gregor Mendel from <http://www.biography.com/people/gregor-mendel-39282#experiments-and-theories>.